News from the
MONTEREY BAY
NATIONAL MARINE SANCTUARY
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION SPRING 2002

Rappin' in the Sanctuary

The Monterey Bay National Marine Sanctuary boasts one of the world's richest natural marine environments, matched by perhaps the world's largest grouping of scientists and research institutions. The area attracts federal and state government institutions, public and private universities, a world-class aquarium, non-profit research institutions and environmental organizations —many focused on understanding and preserving this national treasure. Representatives from 21 institutions come together each month to swap stories, and to a large degree, shape the future of research within sanctuary boundaries. They are the Rappers, formally known as members of the sanctuary's Research Advisory Panel (RAP).

"Our office has a huge area to understand and protect, but we don't have the people and resources to do it—there are only three people in our research program," says Andrew DeVogelaere, sanctuary research coordinator. "So we find ways of working effectively with other individuals and institutions." Through the Research Advisory Panel, DeVogelaere's office seeks to inform scientists about the interesting research questions—from the viewpoint of managing sanctuary resources—that will best inform resource use recommendations and decisions.

"In 1988, before the sanctuary was designated, scientists around the bay formed a group called the Research Advisory Council to define a common vision for area research," explains Chris Harrold, Conservation Director at the Monterey Bay Aquarium and RAP chair. After the sanctuary was designated, the council's role was redefined with a dual purpose: to identify and implement a common vision for research, and to advise the Sanctuary Advisory Council and sanctuary superintendent on specific issues. Over the years, the panel has commented and provided scientific assessment on diverse topics including regulation issues and likely scientific impact of fisheries, underwater cable proposals, and kelp harvesting. "Another important role has emerged, that of communication—the panel provides a regular forum where we share what is going on, find out what people are doing, and discuss research and collaboration opportunities."

Members of the Research Advisory Panel at a recent meeting. (M) denotes RAP member, (G) denotes RAP guest. Back Row: Chris Harrold (M), Charles Wahle (G), Dan Costa (M), Dave Ebert (G), Rikk Kvitek (M), Andrew DeVogelaere (M), Steve Moore (M), Jeff Paduan (M), Churchill Grimes (M), Geoff Wheat (M), Gary Sharp (M). Front Row: George Leonard (G), Rick Starr (M), Mario Tamburri (M), Caroline Pomeroy (M), Kerstin Wasson (M), Greg Cailliet (M), Ross Clark (M), Mike Field (M), Marco Sigala (G).

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WHAT'S INSIDE

News from the
MONTEREY BAY
NATIONAL MARINE SANCTUARY

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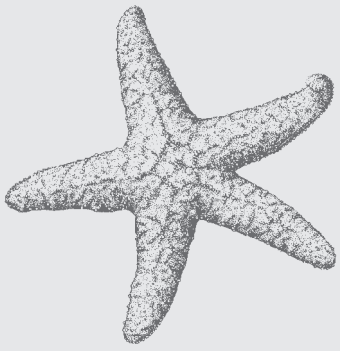
We welcome comments and will consider items submitted by readers as space permits.
Comments and articles should be sent to Dawn Hayes, Education Coordinator, Monterey Bay National Marine Sanctuary, 299 Foam Street, Monterey, California 93940.



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Chris believes the most important contribution in the panel's history is the Sanctuary Integrated Monitoring Network (SIMoN). "It is designed to understand and monitor marine ecosystem change, to determine the extent to which human impact causes change and affects sanctuary resources," says Chris. "We've never had a comprehensive program that would really allow us to see the patterns, then determine what might cause changes in the patterns," he continues. "SIMoN is the most important program the sanctuary office can support —it will help us understand what we can do to protect the sanctuary."

Chris believes as world population increases and our resource needs grow, marine ecosystems will be impacted in ways we can't even imagine. He anticipates the research panel will focus more and more on the science underlying marine conservation issues, however not to the exclusion of strong, basic research. "Ten years ago the focus was on basic research, but the distinction between basic and conservation research has blurred over time as it has become harder to find systems that aren't affected by humans." Chris says we need to focus on the science behind conservation issues. "In many highly charged conservation issues, often the scientific underpinnings are either left out of the discussion, or there is misunderstanding about proposed actions. The more we base decisions on the science underlying them, the happier people are."

Spotlight on Research: Biology

Preparing to release a female leatherback turtle from the R/V Shelia B. *are (left to right) Dr. Peter Dutton, National Marine Fisheries Service, Dr. Scott Eckert, Hubbs-Sea World Research Institute, and Scott Benson, Moss Landing Marine Labs. Photo courtesy of National Marine Fisheries Service.*

One project the sanctuary supports is tracking leatherback turtles, seasonal visitors to the sanctuary. Scott Benson, a graduate student at Moss Landing Marine Labs who has worked for the sanctuary office for five years, is a marine ecologist who investigates distribution and relative abundance of Monterey Bay marine birds and mammals. Scott also works with Dr. Peter Dutton of the National Marine Fisheries Service La Jolla office, and Dr. Scott Eckert of Hubbs-Sea World Research Institute, principal investigators on a turtle project started in 2000.

"In Monterey Bay, after wind-driven upwelling stops in late summer and early fall there is a period of time when the nutrient-rich water becomes more stratified," explains Scott. "It's a time of the year when you see red tides and more jellyfish. Leatherback turtles come here to eat the jellyfish, their only food source."

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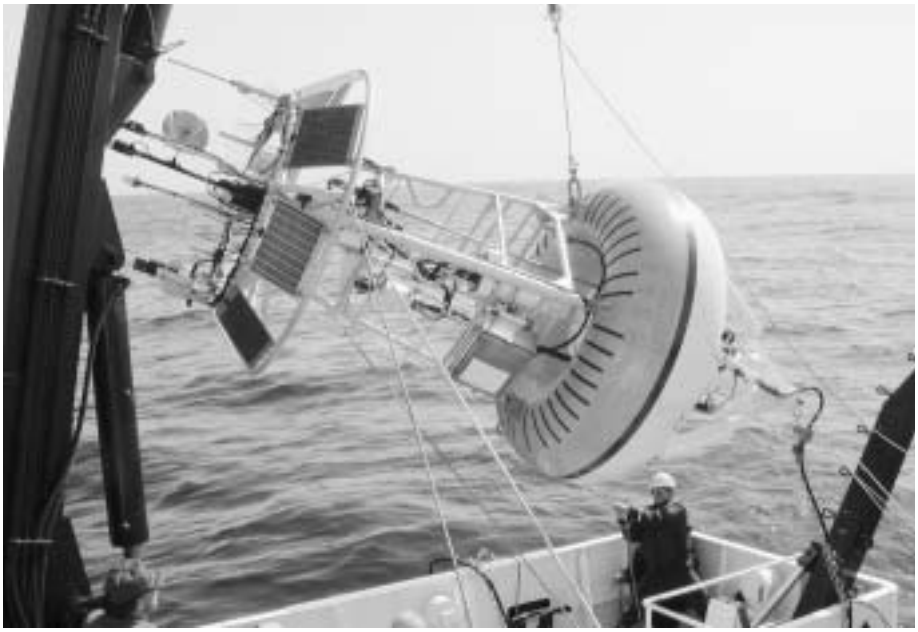
Spotlight on Research: Linking Biological Variations to Physical Oceanography



Deployment of a mooring platform. The SCOPE model output are validated with data collected by these platforms. Image courtesy of Francisco Chavez, MBARI.

"Another project we are very excited to be a part of is Simulations of Coastal Ocean Physics and Ecosystems (SCOPE)," says Andrew DeVogelaere, sanctuary research coordinator and a SCOPE scientist. Led by Francisco Chavez of the Monterey Bay Aquarium Research Institute, this project has the daunting task of tracking and predicting ocean movements and productivity throughout the sanctuary (see www.mbari.org/bog/NOPP). The goal is to model the coastal upwelling ecosystem within the sanctuary, with high spatial (kilometers) and temporal (days) resolution. The model will include physical, chemical, and biological processes, be capable of assimilating data from satellites and sensors in the field, and will simulate seasonal and interannual variations. The idea is to combine circulation and ecosystem modeling to produce a useful tool for sanctuary managers. The model will be used by local, state, and federal agencies for the management of harmful algal blooms, for the advection and redistribution of pollution, and for long-term planning.

The type of modeling they are doing has multiple purposes, explains Francisco Chavez. "First, it forces us to synthesize the available data. Second, it increases communication between disciplines; typically a meteorologist interacts with his peers and not with a zooplankton ecologist, for example." The project also brings together atmospheric scientists and physical and biological oceanographers. "Finally, once we have developed a realistic model, it can be used for a variety of purposes," says Chavez. One is to look both backward and forward in time to investigate El Niño events and longer term variations, and possibly global warming. El Niño is the dominant source of ocean variability from year to year, and has significant impact on the ocean's heat budget and ecosystems. With its meteorological counterpart, the Southern Oscillation (together referred to as El Niño Southern Oscillation or ENSO), this coupled ocean-atmosphere cycle seems responsible for climatic variability throughout the global atmosphere.

"One big challenge of the project is to marry the macroscopic fields that dominate circulation models with the microscopic, 'bug-to-bug' interactions that dominate the biological communities," says Jeff Paduan, Naval Postgraduate School, and co-principal investigator. The resulting SCOPE model will provide a tool for visualizing and forecasting currents and biological growth patterns within the sanctuary.

The model designed by SCOPE scientists will have its limitations, and additional field observations will be required to improve the modeling. "The model will be useful in defining the next observatory for the sanctuary," says Chavez. Telescopes are used to study space and similar capabilities are needed for the ocean. "Unfortunately, because light propagates poorly through water, our 'telescopes' must use a combination of methods including sound, radar, moorings, autonomous vehicles, and remote sensing." Scientists working on the Simulations of Coastal Ocean Physics and Ecosystems project are working on the best design for their telescopes, and computer modeling efforts underway aid this process.

Changing Faces

Farewell to Michele Finn

Lieutenant Commander Michele Finn has completed her detail with the sanctuary office and has returned to Tampa, Florida to train as their newest G4 Pilot. As Assistant Superintendent, Michele covered the duties of her own position as well as those of the Program Support Coordinator, Resource Protection Coordinator, Public Relations Officer, Financial Officer, and many additional duties as they arose. Michele's ability to jump into the fray and come up with solutions made her a valuable asset to the sanctuary team. Michele has been selected by the NOAA Corp to train as the first female pilot for their G4 Jet Aircraft as part of the elite team of Hurricane Hunters. We all wish her the best as she moves into this exciting new phase of her career. Happy flying Michele!

From left to right: Lisa Emanuelson, Bernie Denno and Lisa DeMarignac.

As one detail ends, another begins…

Join us in welcoming Bernie Denno in his detail to the sanctuary office. Bernie Denno has been temporarily assigned to the Monterey Bay National Marine Sanctuary as the Program Support Coordinator. He is the Environmental Compliance and Safety Division Chief for NOAA in Silver Spring, Maryland. He is also assigned to represent NOAA as the Agency Historic Preservation Officer, Energy Conservation Manager, and Environmental Protection Agency representative. Bernie has a Masters in Environmental Sciences from The Johns Hopkins University and a B.S. in Civil/Environmental Engineering from Rochester Institute of Technology. He has over twenty years experience in process analysis and improvements, engineering design and construction, environmental policy formulation and compliance, work-place safety, and management experience in both private and government sectors. Bernie is a certified SCUBA diver, a coach (soccer and baseball) for his children, and has completed a marathon (3 hrs 40 min).

World traveler returns

Lisa DeMarignac, our former Sanctuary Advisory Council Coordinator has returned to the sanctuary office as our new Management Support Specialist. She has been re-hired in her new capacity to help Bill Douros, MBNMS Superintendent, with various management and support tasks, both internal and external. Lisa will be organizing the myriad VIP visits, planning external visits and meetings Bill needs to attend or attending in his place, helping with special events, assisting on some critical policy-related tasks, helping to respond to Washington D.C. headquarters, and tracking internal work priorities.

MBMNS welcomes new educator

Greetings to Lisa Emanuelson, our new Resource Issue Education Specialist. Lisa will focus on water quality and resource protection issues, including dredging and overflight. She will also demonstrate the Enviroscape model, compose the salmon compendium of curriculum, and plan the Volunteer Recognition Gala. Lisa recently moved from Catalina Island in southern California where she was program director for the Catalina Island Marine Institute at Cherry Cove for four years. Prior to her work on Catalina, Lisa was an aquarist at the UCLA Ocean Discovery Center and Marine World Africa USA. She received her B.A. in biology from UCSC. Lisa volunteers with the Catalina Hyperbaric Chamber, is a certified SCUBA Instructor, and is certified as an Emergency Medical Technician.

Fields to the Sea

California's Central Coast is home to another national treasure, its coastal valleys and rich agricultural lands. Agriculture is a major thread in the colorful quilt of life in the Central Coast, and has been for well over a hundred years. This thread is woven through many generations of local families.

"Humans are part of the environment—the sanctuary mission is to protect the sanctuary for humans to enjoy it, although sometimes you have to protect it from humans first," says Paul Hain, an organic walnut grower in San Benito County and board member of the Central Coast Farm Bureau Coalition. "But, you don't want to disrupt the agriculture community, which is a key part of the watershed—farming and ranching is tough enough as it is in today's environment, and you don't want to throw any unnecessary burden on people."

Much of this abundant productivity happens within a stone's throw of the sanctuary. Land and ocean are directly linked; all runoff in the eleven major Central Coast coastal watersheds drain into the sanctuary. Links and partnerships between the sanctuary office and the agriculture community protect and sustain our unique natural resources, vital agricultural and tourist economies, and quality of life for local residents.

The combined influences of agricultural runoff with urban based pollutants from streets, homes, and businesses are addressed by the sanctuary's Water Quality Protection Program action plans. One of the four action plans is the Agriculture and Rural Lands Action Plan. As an integral part of this plan, six Central Coast Farm Bureaus have formed a coalition and more farmers and ranchers have become involved in water quality protection efforts. "Working with the Farm Bureau Coalition has been instrumental in our outreach to farmers and ranchers," says Katie Siegler, sanctuary staff member and agriculture plan coordinator. "Not only have the Farm Bureaus worked to get more people involved in water quality protection, but they've given the sanctuary important feedback about the needs and concerns of the agriculture industry." To encourage more growers to use water quality protection practices such as sediment basins, grassed waterways, stream bank stabilization, and buffer strips, sanctuary staff work with the Farm Bureau Coalition to develop demonstration sites in the six counties. In addition, the Farm Bureau Coalition organizes groups of growers to participate in UC Cooperative Extension's Farm Water Quality Short Course, and develop water quality protection plans for their properties.

"Right now, we are using the 'carrot' of voluntary compliance, and it's working well," says Hain. The agriculture plan outlines a voluntary stewardship approach to addressing agricultural sources. Most people see the plan as a way of improving the environment and a way to improve their operation, as soil conservation makes sense for farmers and growers. "We try to keep our soils and materials on our own property, and if we can do that, we'll also meet water quality objectives. Soil conservation is the best investment a land owner can make." Organic and conventional growers alike can appreciate the soil conservation aspects.

"People in the watershed are already doing many things that support the current state of the sanctuary. Landowners are doing a good job now, not to say they can't do better," Hain says, adding that people in the agriculture community have many resources to turn to for help. As a first step they can contact their local Farm Bureau. Another contact is the Natural Resources Conservation Service, which offers technical and funding support to growers wanting to install water quality protection measures on their properties. "Right now, the sanctuary area is rich with people willing and able to help—there are numerous watershed positions through Farm Bureaus and the Natural Resource Conservation Service, and great potential for demonstrations and learning. We are making some real progress improving water quality as much as possible."

For more information about the Agriculture and Rural Lands Plan or the certified grower program, contact Katie Siegler at the sanctuary office (831) 647-4219.

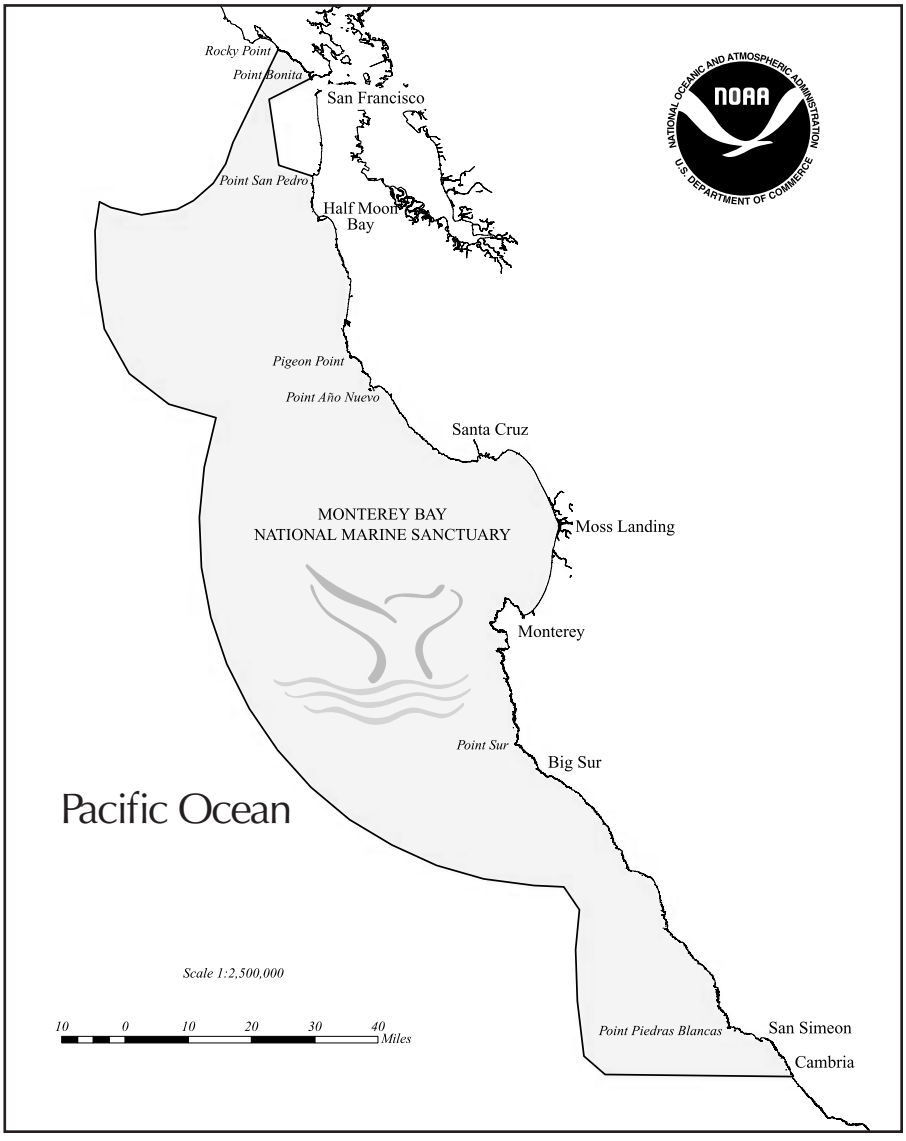
Creature Feature

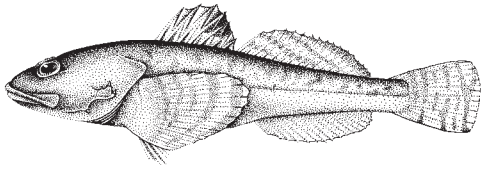
As the seasons change, so do the characters in food webs of the Monterey Bay National Marine Sanctuary. Living things utilize different seasons for activities such as migration, feeding, mating, and bearing young. Here we highlight some of the most interesting and accessible creatures you are likely to find this season.

Spring: March, April and May

Winter's colder water temperatures caused surface waters to sink, stirring up ocean floor sediments and creating a natural phenomenon called overturn. This mixing of ocean water brings deep nutrients to shallower waters and sets the stage for spring blooms. Spring winds trigger upwelling which draws nutrients even closer to the surface. The longer days and warmer temperatures of spring increase the rate at which kelp and phytoplankton take up nutrients and create an aquatic spring bloom, a burst of rapid growth and productivity of marine plants large and small. The plants feed a rich assortment of animals from microscopic zooplankton to migrating gray whales. Spring in the sanctuary is an active season for resident and migrating marine life.

Spring low tides make tidepooling the perfect spring adventure. Many wintering bird species remain along our coast into May, feeding in the productive waters before flying north to breed. Spring is pupping season for harbor seals, the secretive, spotted marine mammals that rest in rocky intertidal areas.





TIDEPOOL FISH

Have you ever seen little fish darting around in shallow tidepools? You are probably looking at a sculpin (Family Cottidae). There are more than 45 species of sculpin in California; common intertidal sculpins include tidepool sculpin, woolly sculpin, and coralline sculpin. Some fish called sculpins aren't sculpins at all! The California scorpionfish (Family Scorpaenidae) is often called a common sculpin or spotted sculpin.

Sculpins have a characteristic appearance; a wide bulbous face, large lips, bulging eyes, and mottled colors. They

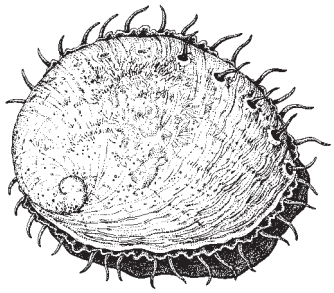
are found resting on tidepool bottoms or partially hidden in sand. Sculpins are masters of camouflage, with color combinations of red, yellow, purple, orange, white, green, and brown. Their mottled coloring blends into rocks and tidepools. Some change color to match their habitat, a go-everywhere ensemble.

Tidepoolers occasionally come upon another unusual fish, the monkeyface prickleback or eel (*Cebidichthys violaceus*). These eel-shaped fish are blackish, gray, or olive-colored, with black lines radiating from the eyes to create a "mask." Monkeyfaces are found in crevices and under ledges in the intertidal zone, and those found in tidepools are less than a foot long.

ABALONE (*Haliotis* sp.)

A beautiful tidepool treasure is an abalone shell. While broken and empty abalone shells are fairly common, live abalone are hard to find. During the day they stay well protected in rocky crevices and under ledges, but come out at night to feed. Abalone are mollusks, a kind of marine snail. Their broad, flat shell is lined with lustrous mother-of-pearl. Many species of abalone occur along California, including black, green, pink, pinto, red, and white.

Abalone are herbivores. They use a rough file-like radula to scrape green and brown algae off the rocks. They have a strong muscular foot to hold to the rock and though they appear immobile, abalone move quickly if necessary. When attacked, abalone clamp down their shell and are difficult to pry off. Cabezon and sheephead, bat rays, sea lions, moray eels, and octopi feed on abalone, but the most voracious consumers of abalone are sea otters and humans.

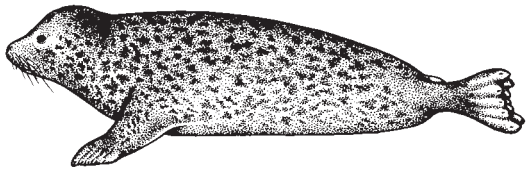


Abalone populations in California have been decimated by a combination of harvesting, habitat disturbance, and a disease called "withering foot syndrome." Commercial and recreational harvest of abalone south of San Francisco is closed. Abalone served in restaurants are raised on abalone farms.

SURF SCOTER
(*Melanitta perspicillata*)

In winter and early spring, birdwatchers enjoy flocks of surf scoters floating just outside breaking waves in harbors and coves. The striking male is almost entirely black with white patches on his face and a red-orange bill. Females are dark brown, with smaller white patches on their heads and necks. You can't miss their bright red legs and webbed feet when scoters dive for food.

Surf scoters are sea ducks. They swallow shellfish whole, then grind the shells in their gizzards. Look for surf scoters by sandy beaches, harbors, and near pier pilings—places where shellfish are easy to find. Good places to see surf scoters include the harbors at Half Moon Bay, Santa Cruz, and Monterey, and in San Simeon cove.



PACIFIC HARBOR SEAL
(*Phoca vitulina*)

The Pacific harbor seal is one of the most common but least-seen marine mammals in California. Unlike noisy sea lions, harbor seals do not bark. Harbor seals avoid human contact and safely position themselves on hard-to-reach nearshore rocks and ledges.

Harbor seals are fairly small; adult males average 6-7 feet long and weigh about 300 pounds and females are slightly smaller. The seals sport beautiful coats of short mottled fur that blends perfectly with the background where they rest.

In California, harbor seals give birth to pups from March to May, with peak pupping in April. Pups weigh 18-20 pounds at birth and are about 2.5 feet long. Most pups are born on land, but births in water are common. Harbor seal pups can swim within an hour of birth, and nurse for 4-6 weeks. During this time they learn to swim and hunt for food. Harbor seal pups sometimes get washed from rocks and float ashore. Beach walkers may find lone harbor seal pups on local beaches. Although they are cute, never pick up a harbor seal pup! Often the mother is nearby in the water, waiting for a safe moment to come and retrieve her pup. She will not come ashore if people are on the beach, so stay far away from the pup. If you suspect that a pup is abandoned, call the Marine Mammal Center, (415) 289-SEAL (7325).

Good times for tidepooling

Spring is the best time to get out and explore tidepools: low tides are during daytime hours, and many are on weekends. Grab an old pair of shoes, visit a tidepool, crouch down like a crab, and get up close and personal with some very colorful individuals (and colonies, like strawberry anemones).

Be sure to go at low tide—at mid and high tides, tidepools are hidden under water or covered by crashing waves, and you'd have to wear a mask and snorkel. The best time to explore a tide pool is during a 0 or minus tide—the lower the better.

Spring low tides in Monterey Bay

May

Sat. May 11, 5:01 am	0
Sun. May 12, 6:14 am	–0.3
(go tidepooling for Mother's Day!)	
Sat. May 18, 10:23 am	–0.5
Sun. May 19, 11:20 am	–0.4

June

Sat. June 1, 10:25 am	-0.1
Sat. June 15, 9:00 am	-0.8
Sun. June 16, 9:50 am	-0.5
Sat. June 29, 8:50 am	-0.2

Locations: Fitzgerald Marine Reserve (Half Moon Bay), Pigeon Point (Southern San Mateo County), Natural Bridges State Beach (Santa Cruz), Asilomar (Pacific Grove), and Moonstone Beach (Cambria).

Sanctuary offices, bait shops, fishing and sailing supply stores, and coastal drug stores hand out tide tables.

Tidepool Detective

Masters of disguise, some tidepool plants look like animals, some animals look like plants, and some look like neither plant nor animal, like the decorator crab that covers itself with bits of shell and debris. Take your time to peer closely in a tidepool; the creatures reveal themselves to the patient observer.

When tidepooling, be a good detective: don't leave a trace, and never turn your back on the sea—you never know when a sneaker wave could carry you out to sea. Let the creatures stay in their homes; if you turn over a rock, replace the rock as you found it.

Hang on tight!

Animals adapt over time to their environment or they don't survive. An important adaptation for benthic (bottom dwelling) creatures is how they attach to the rocky bottom. These critters float in the water when first born, settle on rocks when young, then stay in the same area their entire lives. Some of them don't move at all (mussels), some move very slowly (abalone and limpets), and others are quite agile (sea stars). If they can't hold on tight, they'll have a short life—if knocked loose from their homes they are carried out to sea to their doom.

The best way to learn about something is to see for yourself. Grab your parent and say you need to go to school—at the beach! Natural Bridges State Beach in Santa Cruz is a good example of an exposed area where you'll find animals and plants that hunker down and hold on tight in areas of heavy surf: mussels, sea stars, sea urchins, chitons, and coralline algae. Nooks and crannies of sheltered areas are better for delicate animals such as sculpins, octopus, and sea slugs.

A little help, please

Area bookstores, the Monterey Bay Aquarium, and the Seymour Discovery Center at Long Marine Lab stock the *Peterson "First Guide"* series and other field guides, including *Seashore: Northern and Central California* (The Lone Pine Field Guide), and *Exploring Tide Pools* (The Santa Barbara Museum of Natural History).

See your work in print

Think the ocean is special? Like to draw marine critters, or are you a poet? We want to hear from you! Send us your ideas on "Why the Ocean is Special" and we will publish your creation in future issues. Send to: Dawn Hayes, Education Programs, Monterey Bay National Marine Sanctuary, 299 Foam St., Monterey, CA, 93940. Add a note if you would like your artwork returned.

A New Partnership in Multicultural Education

A pilot education program launched by California State Parks, Elkhorn Slough National Estuarine Research Reserve, and the Monterey Bay National Marine Sanctuary promises to engage Latino youth and families who visit coastal sites. The name of the program is the Multicultural Education for Resource Issues Threatening Oceans. Referred to as the MERITO plan, the Spanish word merito translates to merit in English.

In one of three focus areas in the MERITO plan, a site-based ocean outreach program will be developed to engage Latino youth and families visiting coastal sites in preserving the health and resources of the Sanctuary. Likely spots include selected state park sites in Monterey County, the Elkhorn Slough reserve, and school sites in Watsonville. Also included in MERITO are programs designed to reach teachers, undergraduate and graduate level students, and youth leaders involved with community-based after-school programs.

Initial funding from the National Marine Sanctuary Program and the State of California supports a bilingual educator to provide Spanish-language programming focused on marine conservation, and a program manager to develop programs and acquire future funding. Working through collaborative partnerships, the pilot will leverage limited resources to offer a variety of ocean conservation programs designed to engage our culturally rich and diverse communities. Look for a progress report in the next newsletter.

For more information about the entire MERITO plan, please visit our website at: http://www.mbnms.nos.noaa.gov/Educate/merito/meritoplan/index.html

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The Pacific population of leatherback turtles, which once represented over 50 percent of the global leatherback population, has seriously declined over the past 15 years and is in danger of extinction within the next decade. "One cause is accidental catch in fishing nets, called by-catch," says Scott. "To minimize by-catch fishermen need to know basic information, like where the turtles are and how to avoid them." Without more information on where these turtles travel, how long they remain in heavily fished areas, and how prevalent migrations are, it is difficult to propose practical mitigation measures. Scientists gather this information by tagging the turtles.

"Tagging a leatherback is more difficult than you might think," says Scott. Adults can weigh from 800 to 1200 pounds and are six feet long. Even finding them is difficult, as they spend most of their time underwater and are difficult to see from a boat, so they use an airplane to locate the turtles. "We take a boat to the location, get next to the turtle, and put a large hoop net over it." The net looks like a large butterfly net. It breaks away from the frame and becomes a bag with the turtle inside. The scientists use the *Shelia B.*, a Moss Landing Marine Labs research boat modified for catching turtles. "We lower the bow of the boat, slip under the turtle, then slide it up a shallow slope into the boat." The powerful turtles require two large people to restrain them for the minutes it takes to obtain samples and attach a harness holding a satellite transmitter. "One lifted me off the deck with one flipper," relates Scott. The blue harness, made of webbing covered with plastic tubing to prevent chafing, has attached telemetry tags that download information to satellites about the turtle's location, water temperature, and diving activity. The tags last for up to two years, allowing researchers to track the turtles across the Pacific. Researchers want to know what the turtles are doing, where they go when they come to the California coast, and where they go after they leave.

"The sanctuary office has been a strong supporter from the beginning, taking a lead role in financing modifications made to the *Shelia B.*," says Scott, "and providing information and support in the water and air." In 2000 the project used a NOAA aircraft for survey work, and sanctuary research intern Kelly Newton flies with the group in spotting planes that go as far north as Pt. Arena.

Threatened & Thriving

Artwork by Francis Hanna, student.

Why is it that some plants and animals in the sanctuary are barely holding on, while others are doing just fine? You'll find out why when the sanctuary launches a new public outreach campaign, "Threatened & Thriving," featuring two species in the sanctuary; one whose population is in danger, and the other flourishing. The campaign includes a public lecture series, a poster for each species pair, and will highlight the species in our newsletter and website. Attractive 14 by 22 inch posters will be distributed free of charge at sanctuary public events, to schools, and participating businesses.

We are also soliciting student artwork and quotes about "Threatened & Thriving" species to use in a 16-month student art calendar to be given away during our 10-year anniversary celebrations in September. For information on submitting artwork for the calendar, contact Michele Roest (805) 927-2145, Michele.Roest@noaa.gov. Look for the first "Threatened & Thriving" species pair, Salmon & Sardines, this summer.

Spectacular Turnout for Management Plan Meetings

After a huge effort that spanned from Cambria to Gualala, in 20 meetings from Nov. 28 to Jan. 17, staff from the Monterey Bay National Marine Sanctuary and Gulf of the Farallones and Cordell Bank National Marine Sanctuaries completed the first phase of the Joint Management Plan Review Scoping Meetings. Almost a thousand members of the public turned out to provide their views. The public meetings were held to "scope out" and get input on resource management issues from resource users, interest groups, government agencies, and other members of the public. This input will help define the range of issues the three sanctuaries will address during plan review.

The comments reflect the broad mix of users over almost 400 miles of coastline, and include their opinions and suggestions on how the three marine sanctuaries can be most effectively managed. Listen closely to the concerns of those whose lives are most intricately related to the life and currents of the sanctuary, and you will hear both our past and future.

"For the most part, I think people left the meetings feeling good," says Sean Morton, Management Plan coordinator. "People listened, broke into small groups, and then talked and listened to each other." A recorder in each group wrote down what was said—often extreme points of view were represented in each group, especially those involving fisheries, however all agree that the role of the sanctuary in fishery management must be better defined. "Our next step is for the Sanctuary Advisory Council to distill the comments and help focus on what the big issues are." Due to limited resources and time, not every issue can be addressed in the Management Plan; sanctuary staff from the three sanctuaries will work with the Sanctuary Advisory Council to prioritize issues brought up in scoping meetings, determine the programs sanctuary staff will work on through the review process, and establish the framework for each sanctuary's efforts over the next five years. Additional workshops will be scheduled to help sanctuary staff develop tailored action plans to address those priority issues. These action plans will then form the foundation of the draft management plan. Public input is encouraged throughout the progress. Sanctuary staff expect the review to be completed by the summer of 2003.

Comments

Here are a chosen few from the thousands of comments received.

Overflight regulations need to be changed; they should be based on realistic probabilities of marine mammal and seabird disturbances, not an arbitrary altitude limit. (Cambria)

Sanctuary should consider economic needs of Big Sur residents regarding Highway One closures; should consider marine disposal from time to time. (Big Sur)

Sanctuary should serve as a neutral facilitator in issues involving overlapping jurisdictions. (Monterey)

Education should be provided in different languages. (Salinas)

Gillnet fisheries are damaging and should be prohibited in the sanctuary. (Santa Cruz)

Panetta promised no fishing regulations …make sure MBNMS abides by this. (Santa Cruz)

SANCTUARY CALENDAR

April 20 Snapshot Day
Volunteers take water samples and water quality measurements from watersheds along the sanctuary's length, to get a one-day "snapshot" of sanctuary watershed health.

April 22 Happy Earth Day!

May 10-11 Coastal America Student Ocean Conference
Over 150 high school and middle school students come together in Monterey for an educational extravaganza including a student research summit, student-built ROV contest, field trips, and a career panel.

June 7 Sanctuary Advisory Council Meeting
Open to the public, 8:30 a.m. to 4:30 p.m. You can participate in the management of your marine sanctuary!

June 8 Volunteer Recognition Event
To thank the many community members who volunteer their time and energy for the MBNMS.

SAVE THE DATE:

September 7 10th Anniversary Celebration in San Simeon

September 14 10th Anniversary Celebration in Half Moon Bay

September 21 Oceans Fair and 10th Anniversary Celebration in Monterey

September 28 Santa Cruz Shark Festival and Sanctuary 10th Anniversary Celebration

For more information on these calendar events, call (831) 420-1630.

Help Us Celebrate Our 10th Anniversary!

September 18, 2002 will be the 10th anniversary of the Monterey Bay National Marine Sanctuary's designation, and we are ready to party! We are planning a series of celebrations for the month of September, as well as a number of special events throughout the year.

In May, we'll be teaming up with the Monterey Bay Aquarium and the Marine Advanced Technology Education (MATE) Center to host a Student Ocean Conference on marine research, technology, and conservation for over 150 high school and middle school students from across the state. In June, we'll take a moment to recognize and thank the hundreds of community members who volunteer their time and energy for the sanctuary, whether by educating coastal visitors, monitoring beaches and water quality, or sitting on the Sanctuary Advisory Council. This summer will also see the launch of our new "Threatened and Thriving" conservation education program, which will highlight special marine organisms through a lecture series, posters, and a calendar of children's artwork (see article on page 10.)

And that is just the beginning! September 2002, our official 10th anniversary month, will be marked by not two, not three, but four celebration events along the sanctuary's coastline. Join us in San Simeon on September 7, Half Moon Bay on September 14, and Monterey on September 21. And, if you're not sick of us by then, the Santa Cruz Shark Festival and Sanctuary Celebration is on September 28. Stay tuned for more details on the festivities, and mark your calendars.

The sanctuary would never have been created without the active involvement and enthusiastic support of local communities. Please join us in celebrating the sanctuary and its coastal communities during this milestone year. It is a good time to both reflect on the accomplishments of the last decade, and look ahead to the opportunities of the future. Here's to the next ten years!

NATIONAL MARINE SANCTUARIES
MONTEREY BAY
10th Anniversary

ABOUT THE MONTEREY BAY NATIONAL MARINE SANCTUARY

The Monterey Bay National Marine Sanctuary was established in 1992 as the largest of 13 federal Marine Sanctuaries managed by NOAA, the National Oceanic and Atmospheric Administration. Encompassing over 5,300 square miles of water, the sanctuary stretches along the Central California Coast from the Marin Headlands north of San Francisco southward to Cambria in San Luis Obispo County, and protects many habitats, ranging from sandy beaches and kelp forests to one of the largest underwater canyons on the west coast. Nutrient-rich currents nourish the area, supporting a productive and diverse marine ecosystem where countless species, many of the threatened or endangered, make their homes.

The mission of the National Marine Sanctuaries Program is to serve as the trustee for the nation's system of marine protected areas to conserve, protect, and enhance their biodiversity, ecological integrity, and cultural legacy.

For more information contact the Monterey Bay National Marine Sanctuary office at 299 Foam Street, Monterey, CA 93940. (831) 647-4201. Visit www.mbnms.nos.noaa.gov

National Oceanic and Atmospheric Administration
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DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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NATIONAL MARINE SANCTUARIES
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